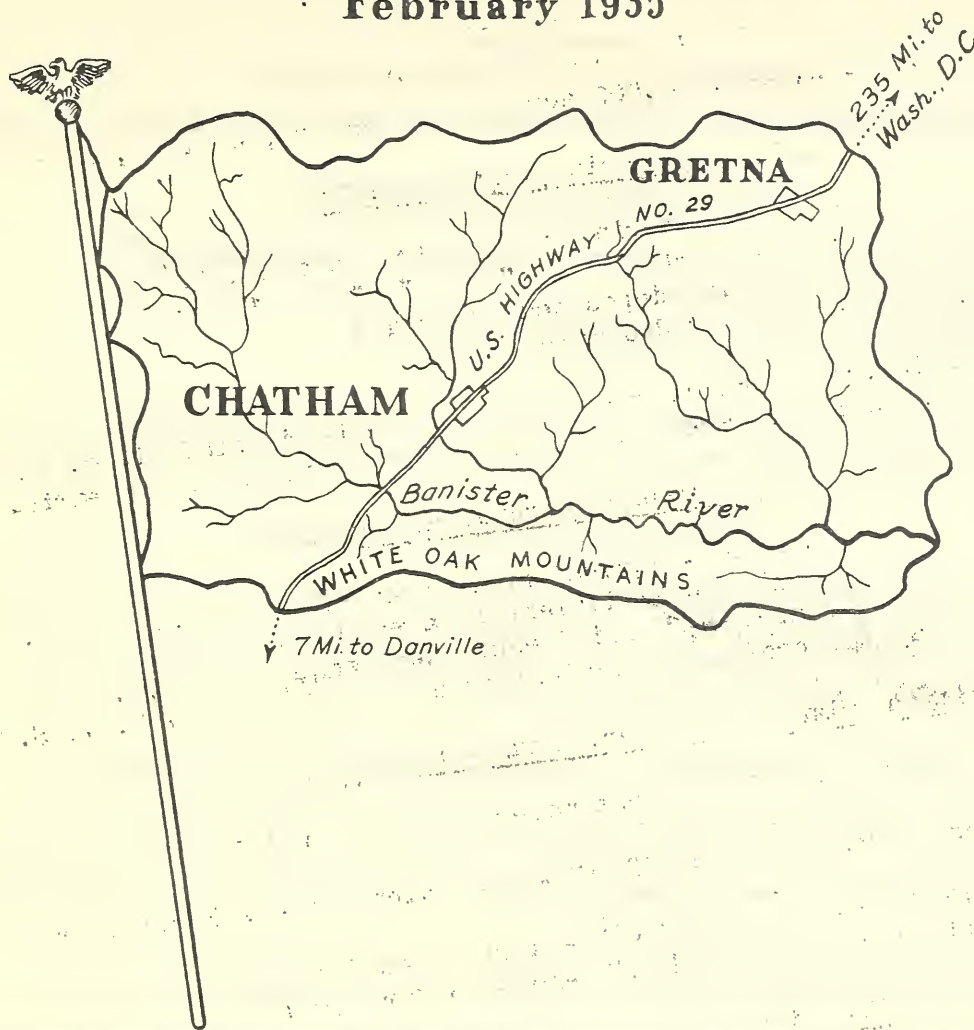


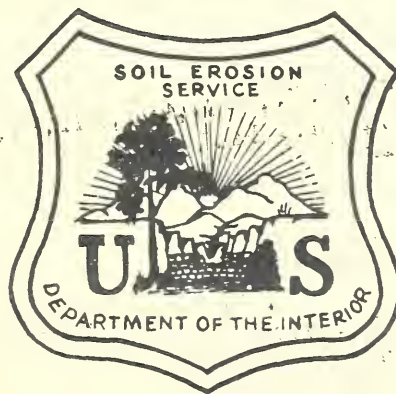
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Do not assume content reflects current scientific knowledge, policies, or practices.

February 1935



Banister River Banner



VOLUME 1

CHATHAM, VIRGINIA

NUMBER 7

SOIL EROSION SERVICE
United States Department of the Interior
Project No. 22 - Chatham, Va.

EROSION LOSS IN THE UNITED STATES

(Area in cultivation, 350,000,000 acres¹; in pasture, 400,000,000 acres²)

Tons of material lost annually

500,000,000 Tons - Solid material carried to sea annually³
270,000,000 Tons - Dissolved " " " " " " ³
730,000,000 Tons - Material deposited in land
1,500,000,000 Tons - Total eroded material³

Recent surveys indicate that this estimate should be doubled⁴ i. e. enough to fill a hole $3\frac{1}{2}$ acres in area extending from the center of the earth.

Total acreages already affected

125,000,000 Acres impoverished⁵ - Equivalent to area of Md., Va., N.C., S.C., Ga.
33,000,000 Acres devastated⁵ - Equivalent to area of N.C.
(17,500,000 Acres-part of above)- Gullied equivalent to area of S.C.
125,000,000 Acres rapidly eroding-Equivalent to area of Md., Va., N.C., S.C., Ga.

Quantity and value of material washed away annually

63,000,000 Tons potential plant nutrient material³ - Equivalent to 21 x Annual Crop Removal
27,000,000 Tons fertilizer elements (NPK)³ - Equivalent to 3 x Fertilizers sold 1931
\$2,000,000,000 Fertilizer elements (NPK)³ - loss to nation
\$200,000,000 Fertilizer elements (NPK)³ -loss to farm land

Unestimated costs to nation

Damage by silting to streams, rivers, harbors, reservoirs

Damage by floods - loss in decreased crops

Erosion loss in the Piedmont

32,500,000 Acres eroded 4"-18"
2,500,000 Acres destroyed by gullying
13,200,000 Acres impoverished in Ala., Ga., N.C., S.C., Va., Md., Pa., Del., N.J.⁵
4,900,000 Acres devastated in N.C., Va., Md., Pa., N.J.
50-60% - Productive alluvial covered 0-6'⁶

References

1. Year Book, 1933, p. 698
2. Year Book, 1932, p. 282
3. "The increased cost of erosion", Bennett, 1929
Annals Am. Acad. Pol & Soc Science
4. Bennett. N.Y. Times, June 17, 1934
5. "Land Use Conference Proceedings", N.J. Agr. Expt. Sta. Bul. 552
"Land use and soil erosion", Bennett (1933)
6. "Cultural changes in soils from standpoint of erosion"; Bennett,
Jour. A, Soc Agr. Vol. 23 No. 6, 1931

CONTRACTS AND COMMON SENSE

We of the Soil Erosion Service want you to think of our contract as a moral as well as legal agreement. For many whose word is as good as their bond, it only satisfies legal formality. However, any contract is a contract and should be so considered. Our contracts are really an agreed basis upon which we and the cooperator can carry on our erosion control demonstration on a common ground.

We haven't the time nor the disposition to police the operator; nor should it ever be necessary. He now understands our idea -- our method for control of a national and local calamity now upon us. We of the Service want him to go along with us; to work with us to the same end; and to observe the results with us.

This demonstration is your experiment as well as ours and we sincerely hope you will cooperate in making it successful. If you do not, you will not be benefited; neither will the nation.

These contracts contain a statement of the erosion control program which we have worked out together and agree will apply best to your particular farm. Thus, this contract should do away with any misunderstanding as to the agreement. Further than this, it can, for cause, be changed by an amendment. Hence, there is no cause for disregarding the signed contract.

We believe you will agree that if the program set forth in the contract is carried out, it will not only help to keep the soil in place but will build up or retain its fertility so that the life of our farms will be extended. Thus, we conclude by saying, "The contract is a statement of what is best for us. Therefore, let us all cooperate wholeheartedly in our erosion control work; it is the results that we want."

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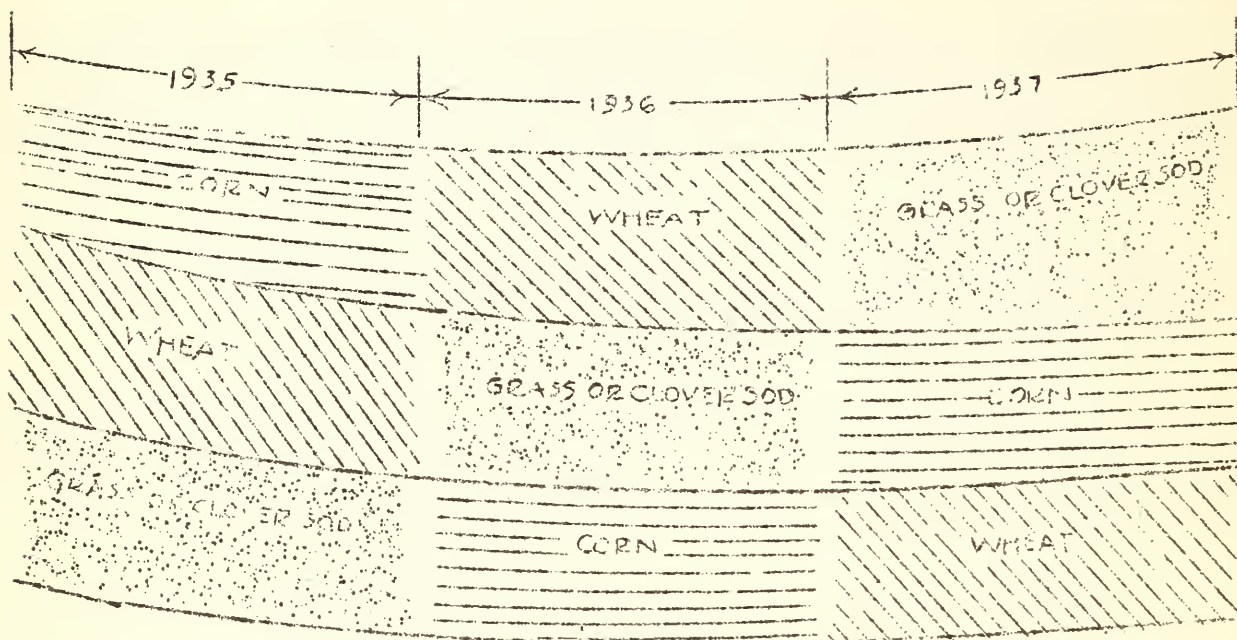
Mr. Bocker J. Reynolds, one of our cooperators, is in favor of the broad-base terrace. He owns three farms in the Banister River Watershed Area. Co-operative Agreements for two of these farms were signed early in the fall. On one of these farms both broad and narrow base terraces were built. In planning the other farm, which is his home farm, he said that he wanted all the terraces on this farm to be with a broad base and as close together as possible. Mr. Reynolds believes that the broader the terrace, the easier it will be to operate machinery over it. His reason for wanting the terraces close together is that the nearer the terraces are together the less water they will be required to carry, so they can be worked down more. He believes that he will be hindered but little in the use of his machinery on a terraced field if broad-base terraces are put close together.

* * * * *

In order that the Soil Erosion Service may concentrate its efforts upon the two new areas in the Sandy River-Sandy Creek Watersheds recently approved, it will be necessary to complete the signing of cooperative agreements in the Banister River Area as soon as possible. Our present staff will handle the work in the new areas, but some time will be required to secure aerial maps and to complete other details. Until such material is ready the Soil Erosion Department will be glad to have a man visit your farm for the purpose of working out with you an Erosion Control Program. If you have not sent in an invitation, let us urge you to do so before February 15th and begin to secure the benefits to be derived from the Soil Erosion program.

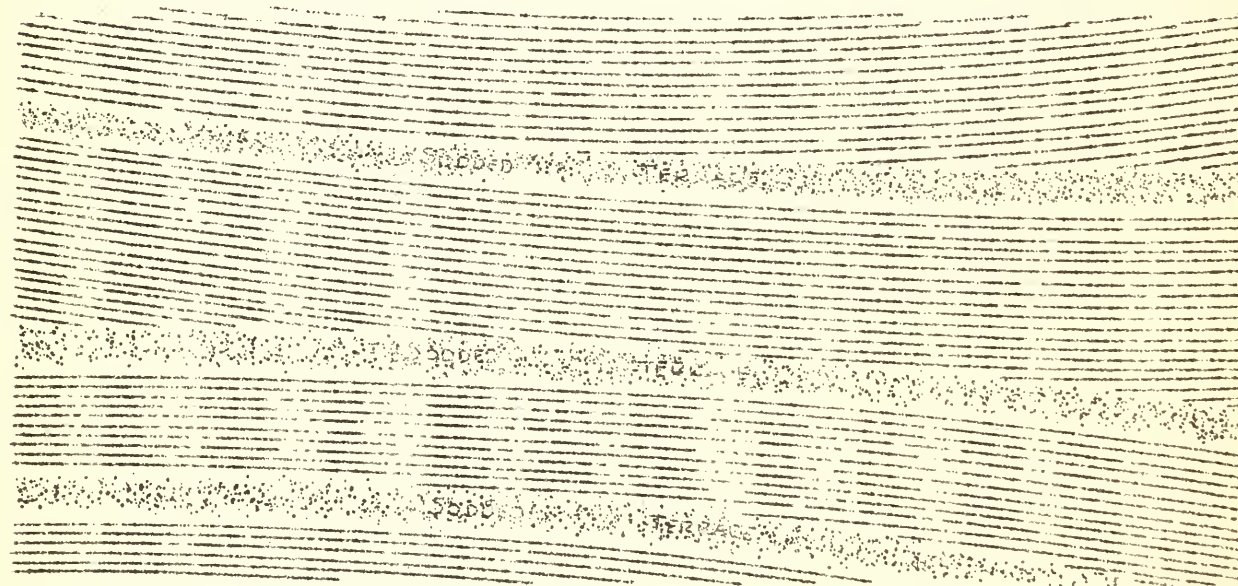
DIAGRAM SHOWING A THREE YEAR CROPPING PLAN FOR A STRIP ROTATED FIELD

This illustration shows how a complete three year rotation may be established in a field in strip fashion. Note that one of the three strips is in cultivation each year while the other two are in small grain and hay. The diagram shows how the crops should follow each other over a three year period



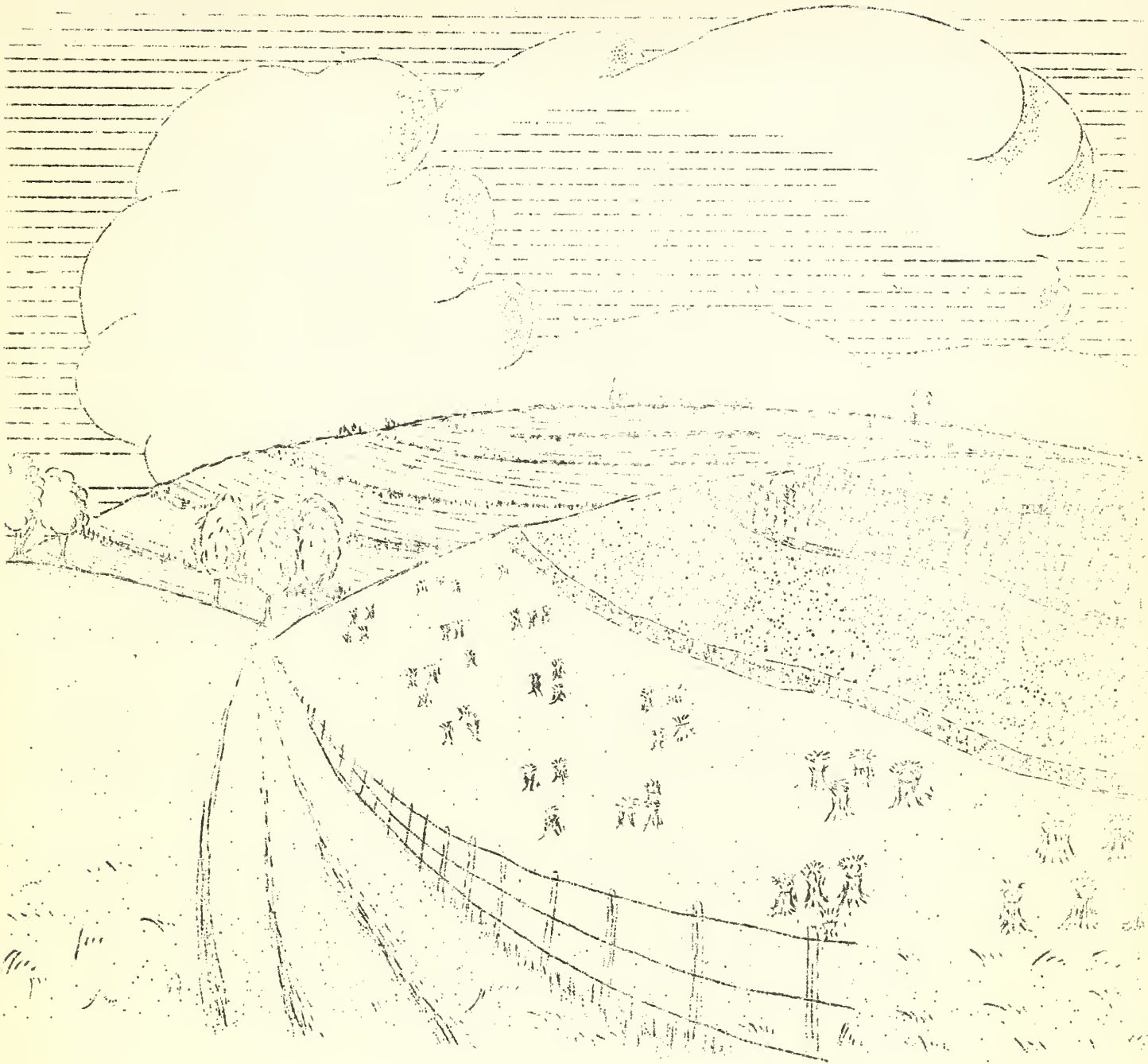
and the system may be continued indefinitely. Compare this diagram with illustration on opposite page.

NARROW STRIPS OF SOD ALONG TERRACE OR CONTOUR LINES



This diagram shows how permanent sod strips may be seeded on terraces in a cultivated field. Such a system works well on terraced tobacco fields and helps the terraces to become established.

FARMED ON AN EROSION CONTROL PLAN



The illustration shows a farm which has been layed out so as to most effectively control erosion. On the field to the right the farmer is following a three year rotation and each crop occupies a contour strip. Under such a plan erosion will be reduced to a minimum since only one-third of the field is in cultivation at one time, and that with the contour. Such a plan might be used with or without terraces. The diagram on the opposite page shows how the rotation continues from year to year. Many of our farmers are rearranging their fields to conform to this plan. The field in the background has been terraced and is in a cultivated crop. The terrace banks have been seeded as permanent sod strips in order to protect them while they are becoming established.

From June 21, 1934 to January 25, 1935, the C.C.C. enrollees constructed 5,368 soil check dams in eroded gullies and terrace outlet channels, trenched and graded approximately 25,600 lineal yards or 14 miles of terrace outlet channels and sloped approximately 14,200 square yards of gully banks in preparation for the seeding and planting operations. This large amount of work has benefited about 2,350 acres of farm land in the area.

Gully Control Work

There are approximately 25,000 eroded gullies in the Banister River Area that should be controlled or stopped from eroding. If left untouched to continue their devastating work these gullies will eventually destroy many of the finest farms in the area. It is the plan of the Soil Erosion Service, with the cooperation of the farmers and C.C.C. enrollees to control every gully of any serious nature in the area by revegetation. By revegetation is meant the planting of suitable trees, vines and grasses on the gully bank slopes, around the rims and on the bottoms to hold the soil after becoming well established.

All gullies are not necessarily treated in the same way for proper control. Gullies having drainage areas of 5 acres or less can often times be completely controlled with vegetation alone, while others, with larger drainage areas usually require the mechanical aid of soil check dams.

Gullies having small drainage areas offer no serious problems of control. If the banks of gullies of this type are plowed down and planted with suitable soil binding plants or trees such as black locust, honeysuckle, kudzu, etc., and a small quantity of brush properly staked down in the bottoms to catch and hold the loose soil, it will require only a few years before these gullies will become completely stabilized.

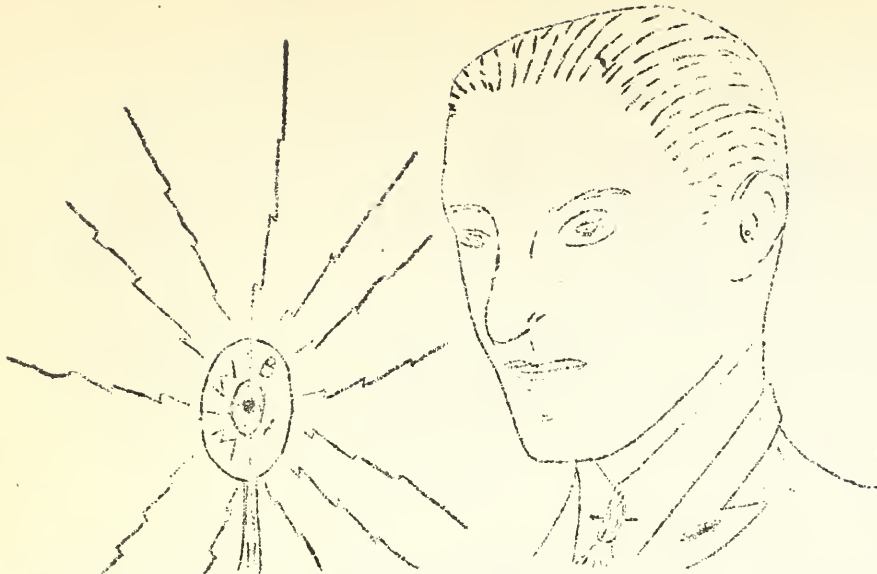
The control of gullies having large drainage areas is sometimes a difficult task because of the large volumes of water draining into them. However, all gullies, regardless of size, shape or drainage area, can be completely and economically controlled if the work is properly planned and executed.

The first step in the effective control of gully erosion, as recommended by the Soil Erosion Service, is the construction of suitable soil check dams, properly spaced in the bottoms of the gullies. These check dams may be either permanent or temporary, depending upon the degree of slope and drainage area. Better than 95% of all check dams that have been constructed in the area to date, are of the temporary type, such as log, wire, brush and rock. It is estimated that the life of these dams is approximately 5 years.

Terrace Outlet Channels

Approximately 14 miles of terrace outlet channels have been constructed by the C.C.C. enrollees during the past seven months.

The function of a terrace outlet channel is to conduct the rain water from the terrace outlets to a point where it will do the least damage when released. The majority of the terrace outlet channels constructed in the area empty into gullies which are completely stabilized or controlled with vegetation. These channels are designed to carry the maximum amount of water with the least possible erosion and silting. They are constructed with wide flat bottoms in order that the water may be spread out, thus, reducing its erosive power.



SOIL EROSION SERVICE

RADIO

SCHEDULE

STATION

W. B. T. M., DANVILLE VA

SPAKER	DATE & TIME	SUBJECT
E. M. Matthews, Supt. State Exp't. Station	February 5, 1935 1:30 P. M.	"Tobacco Raising and Soil Erosion"
Alec Yedinak, Jr. Soils Expert	February 12, 1935 1:30 P. M.	"Soil Surveys"
Wesley G. Nunn, Ass't Agri. Eng'r.	February 19, 1935 1:30 P. M.	"Terracing and Soil Erosion Control"
Overton W. Price, Jr. Forester	February 26, 1935 1:30 P. M.	"Reforestation as a Help in Erosion Control"

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EDUCATIONAL MEETINGS

Plans of the Agronomy and Erosion Departments call for a series of meetings during the month of February to better acquaint the farmers with the program recommended by the Soil Erosion Service. Four meetings have already been scheduled and appear below.

Tuesday, Feb. 5th - Dry Fork - Oakland Methodist Church - 7:30 P. M.
Wednesday, Feb. 6th - Callands - Callands High School - 7:00 P. M.
Thursday, Feb. 7th - Climax - Climax High School - 7:00 P. M.
Friday, Feb. 8th - Whitmell - Whitmell High School - 7:30 P. M.

Pictures depicting work in and around our project will be shown at all of these meetings where electric current is available.

Meetings will also be held at other points in the Area. The exact time and places have not been determined, but will be announced later.

* * * * *

MR. FARMER: What do you think of the work of the Soil Erosion Service in this Area? We would like to have your candid opinion. Write us a few lines and mail or bring it to the office. Let us have your honest opinion of the work being done.

S O I L E R O S I O N S E R V I C E
United States Department of the Interior
Project No. 22 - Chatham, Va.

THE PROTECTIVE POWER OF GRASS

"The average rate of soil loss caused by erosion from the principal type of land on moderate slopes in the wheat belt of western Kansas has been 4,260 times greater where a cultivated crop (kafir) was grown than where the same kind of land was covered with native plains sod. Also, about 400 times as much water has been absorbed where the ground was well grassed. Expressed in another way, where a tilled crop is grown, 58 years would be required to wash off the 7 inches of topsoil covering this kind of land down to comparatively unproductive subsoil, as against 246,000 years to wash off the same depth of soil where grass is grown."

STRIP CROPPING TO SAVE SOIL

"A considerable number of farmers in the hill country of Wisconsin, apparently sensing the prodigious soil-saving capacity of grass, have for a long time been practicing strip cropping to protect their sloping fields. They have left the steeper upper slopes in woods; below the woods they have planted grass along the contours, that is, in level strips across the field rather than up and down them; and below this they have grown alternately strips of corn, grass, potatoes, grass, and so on. The grass intercepts the water flowing downhill, checks its velocity, spreads it out and causes much of it to sink into the ground, thus giving protection to the strips below.

This practice not only affords a large measure of protection from erosion, but provides a balanced type of agriculture, the growing of a variety of crops. Since the grass strips often include clover, and since the position of the crops is switched from time to time, the practice also means the employment of soil-improving rotations.

To some extent Pennsylvania-Dutch farmers have used this system, which so closely conforms to nature's method of stabilizing sloping land. But few others have done so until recently. At the erosion-experiment stations throughout the country the method is being tested in various modifications, employing a large number of the thick-growing, soil-saving crops, as grasses, clovers, sorghum, alfalfa, lespedeza, peas, and so on. A combination of strip cropping with small embankments (terraces) following the contours of the fields is being tested also. One farm of over 5,000 acres in the erosive black belt of central Texas is now completely and effectively covered with this cheap, simple system of soil conservation."

.....From "Soil Crossroads", January, 1935 - Big Creek Area, Bethany, Missouri.

* * * * *

CO-OPERATION

"It is the sole purpose of the Soil Erosion Service to develop a national program of expansion in which it will work hand in hand with the Extension Service, the State Colleges of Agriculture, the State Experiment Stations, and all other organizations which can in any way contribute to the continuing welfare of the land and those who till it." ---H. H. Bennett, Director, U. S. Soil Erosion Service, Washington, D. C.

* * * * *

"Seven Inches to Famine" might well be our text for any erosion discussion since when the topsoil is gone the farm has left us.